

CONCEPT APPLICATION LEVEL - III

SECTION-A

• **Multiple choice question with single correct answers**

- Q.1 Which of the following cannot be charged easily by friction?
(A) Plastic scale (B) Woolen cloth (C) Copper rod (D) Inflated balloon
- Q.2 When a glass rod is rubbed with a piece of silk cloth. The rod
(A) and the cloth both acquire positive charge
(B) becomes positively charged while cloth has a negative charge
(C) both acquire negative charge
(D) becomes negatively charged while the cloth has a positive charge.
- Q.3 Charge can be produced on a body by
(A) Induction (B) Heating (C) Pressuring (D) Cooling
- Q.4 A body is positively charged means
(A) Having excess of electron (B) Deficiency of electron
(C) Excess of mass (D) Deficiency of mass
- Q.5 A body is negatively charged means
(A) Excess of electron (B) Deficiency of electron
(C) Extra mass on body (D) Excess of neutrons
- Q.6 During thunderstorms lightning which will be seen/heard first-
(A) Light (B) Sound (C) Both same time (D) None
- Q.7 During lightning, you should come out from building
(A) Yes (B) No
(C) Makes no difference (D) None of these
- Q.8 The process of transfer of charges from a charged object to the earth is called
(A) earthing (B) lightning
(C) oscillation motion (D) electron movement
- Q.9 The power of an earthquake is expressed on a scale called
(A) seismic scale (B) iron scale (C) richter scale (D) large scale
- Q.10 Which instrument is used to measure earthquake?
(A) Richter scale (B) Seismograph (C) Polygraph (D) None of these
- Q.11 Which is not a natural phenomena?
(A) Earthquakes (B) Cyclones (C) Lightning (D) Earthing
- Q.12 How many types of charges are gained by rubbing objects?
(A) 2 (B) 1 (C) 3 (D) 4
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- Q.13 Where is the lightning rod attached to protect the building from lightning?
(A) On the top of the building (B) On the bottom of the building
(C) In the middle of the building (D) All of these
- Q.14 Lightning always follows
(A) a thunder (B) rain pour (C) the easiest path (D) a straight path
- Q.15 Tsunami means
(A) earthquake (B) floods
(C) earthquake under the sea (D) eruption of volcano in a sea
- Q.16 The waves produced on the earth's surface is called
(A) seismic wave (B) longitudinal wave (C) Micro wave (D) Radio wave
- Q.17 Amber is a
(A) metal (B) rubber (C) resin (D) sugar
- Q.18 Which is the surest test of charge on a body ?
(A) Repulsion (B) Lightning (C) Combustion (D) Insulation
- Q.19 Which of the following can be charged with static electricity?
(A) Metal (B) Alloy (C) Insulator (D) Semiconductor
- Q.20 Which of the following occurs during lightning?
(A) Acid rain (B) Nitrogen fixation (C) Green house effect (D) Earthing
- Q.21 Which of the following can be charged by rubbing?
(A) Ebonite (B) Plastic (C) Amber (D) All of these
- Q.22 When two bodies are rubbed against each other, they acquire
(A) equal and like charges (B) equal and unlike charges
(C) unequal and like charges (D) unequal and unlike charges
- Q.23 Lightning occurs because of
(A) rain (B) electric discharge (C) wind (D) angry Gods
- Q.24 Electric charges are
(A) only positive (B) only negative
(C) either positive or negative (D) insulators
- Q.25 In a neutral object, there are
(A) equal number of atoms
(B) more positive charges than negative charges
(C) equal number of positive and negative charges.
(D) None
- Q.26 The air in the path of lightning goes up to a temperature of about
(A) 300°C (B) 3000°C (C) 300,000°C (D) 30,000°C
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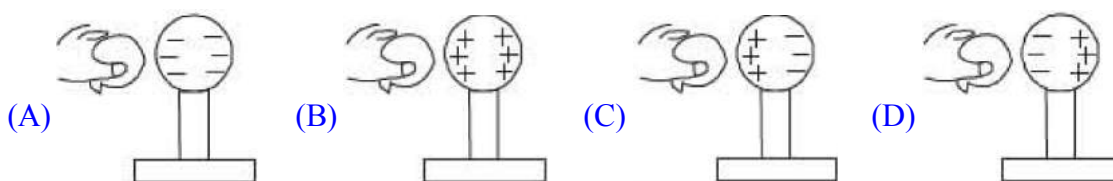
- Q.27 A lightning conductor
(A) conducts light
(B) stops lightning
(C) protects buildings from the damaging effects of lightning
(D) prevents clouds from coming near a building and thus protects it
- Q.28 If you are caught in a thunderstorm you should
(A) go and stand on a high ground (B) stand under a tree
(C) take shelter indoors (D) All of the above
- Q.29 Charged objects exert a on each other
(A) cloud (B) lightning (C) force (D) power
- Q.30 We hear a thunder because
(A) a lot of charge goes in lightning
(B) because lightning is very bright
(C) because the air heats up and expands all of a sudden
(D) Clouds bang against each other
- Q.31 Lightning always follows
(A) a straight path (B) the easiest path (C) a thunder (D) rain
- Q.32 The brilliant spark produced in the sky, is followed by :
(A) rain (B) thunder (C) hail (D) snow
- Q.33 The process of discharging atmospheric electricity into the earth by a lightning conductor is called :
(A) electrical neutralization (B) short-circuiting
(C) earthing (D) both (A) and (B)
- Q.34 The solid hard crust of the earth is called :
(A) geosphere (B) lithosphere (C) magma (D) biosphere
- Q.35 Tsunami is caused when
(A) there is an earthquake near the coastal region
(B) a volcano erupts near the coastal region
(C) a portion of the lithosphere sinks in the mantle under the sea
(D) all the above
- Q.36 The point directly above the origin point of the earthquake under the surface of the earth is called :
(A) seismic focus (B) seismic front (C) epicentre (D) Both (A) and (B)
- Q.37 Static electricity or electrostatics is the electricity in which
(A) Charges are in motion (B) Charges are at rest
(C) Both (A) and (B) (D) None of these
- Q.38 Similar charges :
(A) Repel each other (B) Attract each other
(C) Neither attract nor repel (D) None
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- Q.39 Repulsion is :
 (A) The surest test for electrification (B) The only property of charge
 (C) Neither (A) nor (B) (D) All of these
- Q.40 Three subatomic particles are
 (A) Neutrons, protons and electrons (B) Nucleus, protons and gamma-rays
 (C) Neutrons, X-rays and gamma-rays (D) All of these
- Q.41 When two clouds having huge amount of positive and negative charges approach each other, then :
 (A) The air becomes a good conductor of electricity
 (B) The air becomes a bad conductor of electricity
 (C) Huge discharge passes across them, called lightning
 (D) None of these
- Q.42 Generally lower part of clouds has :
 (A) positive charge (B) negative charge (C) zero charge (D) any type of charge
- Q.43 Electric charges are
 (A) only positive (B) only negative
 (C) either positive or negative (D) insulators
- Q.44 The correct relation between speed of light (C) and speed of sound (V_s) is :
 (A) $C < V_s$ (B) $C \geq V_s$ (C) $C \gg V_s$ (D) $C = V_s$

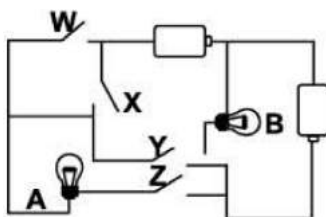
SECTION - B

PREVIOUS YEARS QUESTIONS

- Q.1 A negatively charged balloon is brought near a neutral metal sphere. Which one of these diagrams correctly shows the distribution of charges on the metal sphere? [NSO-2010]



- Q.2 Study the circuit diagram given here carefully. Bulb A would light up only when two switches are closed. Which of the following are the two switches? [NSO-2011]



- (A) W and X (B) Y and Z (C) X and Y (D) W and Z

- Q.3 Match the options given in Column A with Column B and mark the correct option. [NSO-2011]
- | Column A | Column B |
|------------------------------------|---|
| (a) Electrolyte | (i) Production of magnesium chloride |
| (b) Cathode | (ii) Negatively charged electrode |
| (c) Cathode | (iii) Copper sulphate solution |
| (d) Anode | (iv) Connected to negative pole of battery. |
| (A) a-(iii), b-(iv), c-(i), d-(ii) | (B) a-(ii), b-(iii), c-(iv), d-(i) |
| (C) a-(iv), b-(iii), c-(i), d-(ii) | (D) a-(i), b-(ii), c-(iv), d-(iii) |
- Q.4 During a thunderstorm, an observer can see lightning before hearing its thunder. Why does he see lightning before he hear thunder? [NSO-2012]
- (A) Sound travels slower than light.
 (B) Sound needs a medium to travel through.
 (C) Sound cannot reflect off surfaces as easily as light.
 (D) Sound is not processed by the brain as fast as light.
- Q.5 Match Column-I with Column-II and mark the correct option. [NSO-2013]
- | Column-I | Column-II |
|------------------------------------|------------------------------------|
| (a) Richter scale | (i) Electric Charge |
| (b) Electroscope | (ii) Amber |
| (c) Resin | (iii) Earthquake |
| (d) Electric Current | (iv) Flow of Charges |
| (A) a-(iv), b-(ii), c-(i), d-(iii) | (B) a-(iii), b-(i), c-(ii), d-(iv) |
| (C) a-(i), b-(iii), c-(iv), d-(ii) | (D) a-(ii), b-(iv), c-(i), d-(iii) |
- Q.6 In an electrical circuit containing a battery, the positive charge inside the battery _____. [NSO-2014]
- (A) always goes from positive terminal to the negative terminal
 (B) may go from positive terminal to negative terminal
 (C) always goes from the negative terminal to positive terminal
 (D) does not move

SECTION-C

- Match the following (one to one)

Column-I and **column-II** contains **four** entries each. Entries of column-I are to be matched with some entries of column-II. Only One entries of column-I may have the matching with the same entries of column-II and one entry of column-II Only one matching with entries of column-I

- Q.1
- | Column I | Column II |
|--|--|
| Cases | Result |
| (A) Gaining electrons | (P) Positively charged body |
| (B) Losing electrons | (Q) Negatively charged body |
| (C) Using lightning conductors in building | (R) Magnitude on Richter scale > 7 . |
| (D) Destructive earthquakes | (S) Safety of building |
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